



# Run I I b Adapter Card Ring

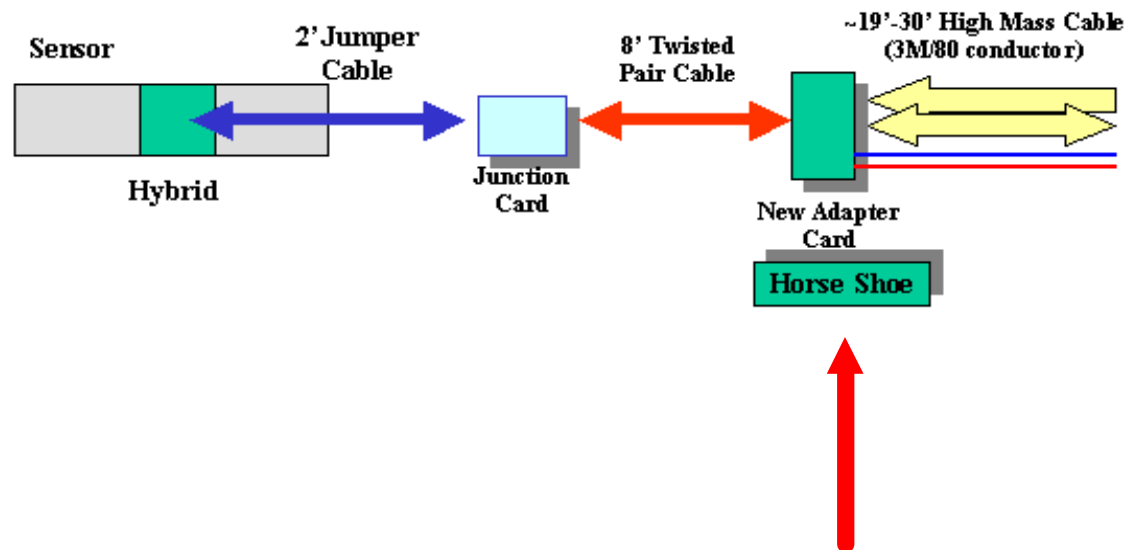
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- Function
- Form
- Fit
  - ◆ Constraints
  - ◆ Modification Suggestion
- Future Plans
- Conclusion



# Function: Adapter Card Ring

- Adapter Card Ring – Horseshoe
- Where is it in the system?





# Function

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- Provides mounting location for
  - ◆ Temperature monitoring system junction card
  - ◆ Radiation monitoring system junction card
  - ◆ Adapter card
- Provides cooling for Adapter Card voltage regulators



# Fit: Constraints

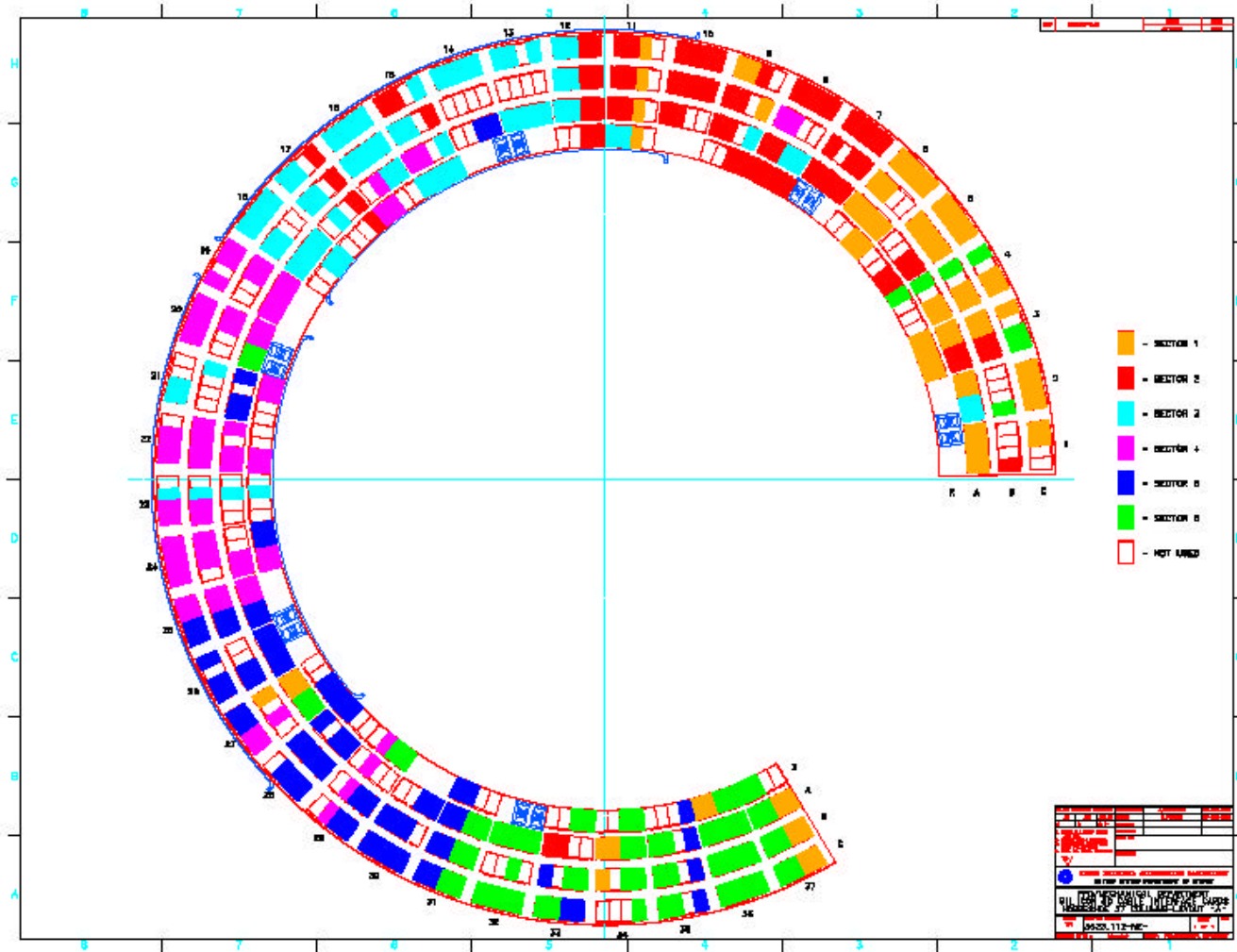
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- All cables to and from anything mounted on the horseshoe must fit in 'z' with ECs closed.
- Accommodate 111 Adapter cards per end.
- Position of Adapter cards must fit 80 conductor cable plant.





# Fit: 37 Card Layout



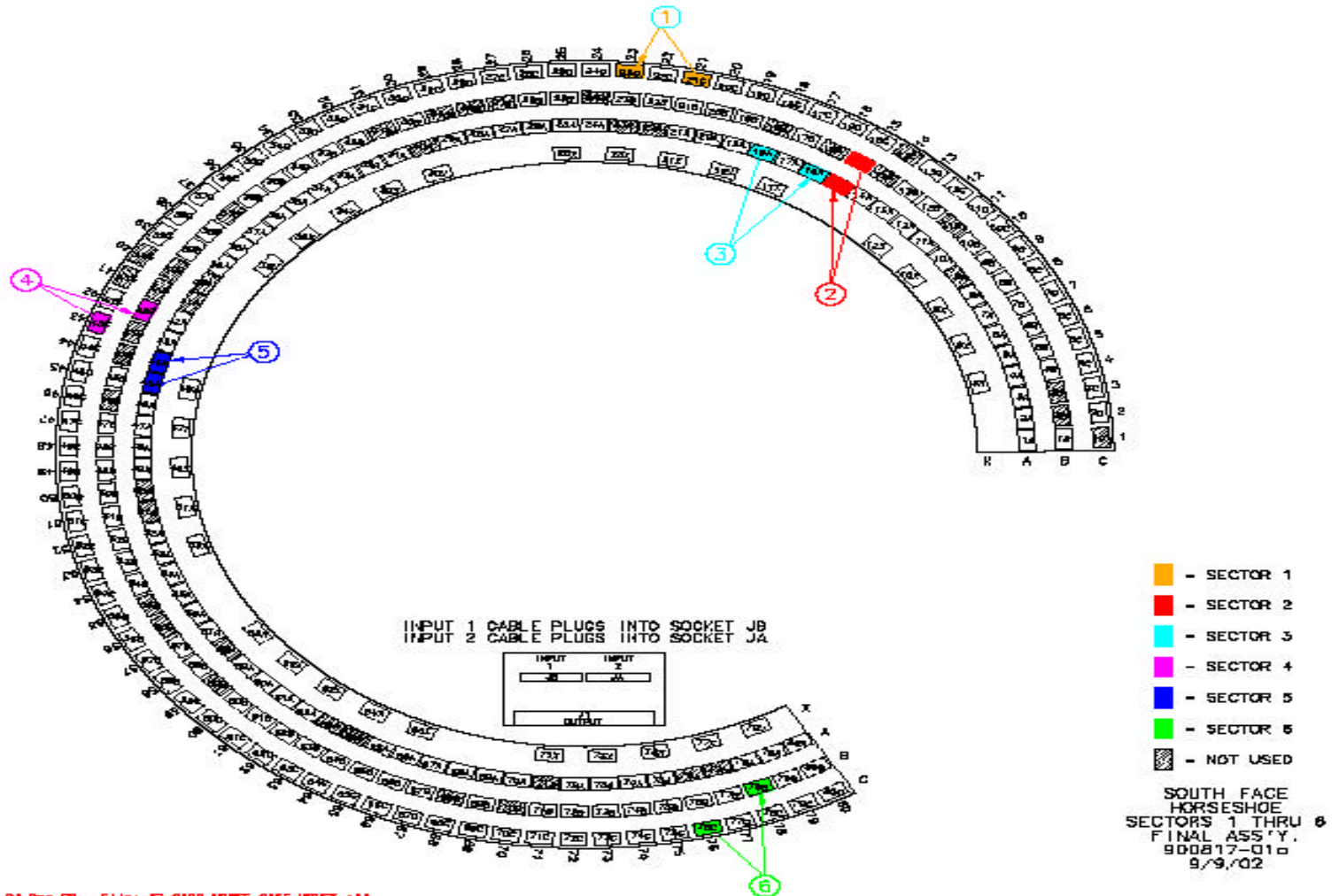


# 37 Card Required Moves

SECTOR	# of moves	from	to	DISTANCE (in)
1	30	21A	23A	(4) 6
2	28	15A	16X	(5) 6
3	22	18A	16A	(1) 7
4	28	43C	42B	(4) 6
5	24	45A	44A	(3) 3
6	25	76C	78B	(1) 8
Total	157			



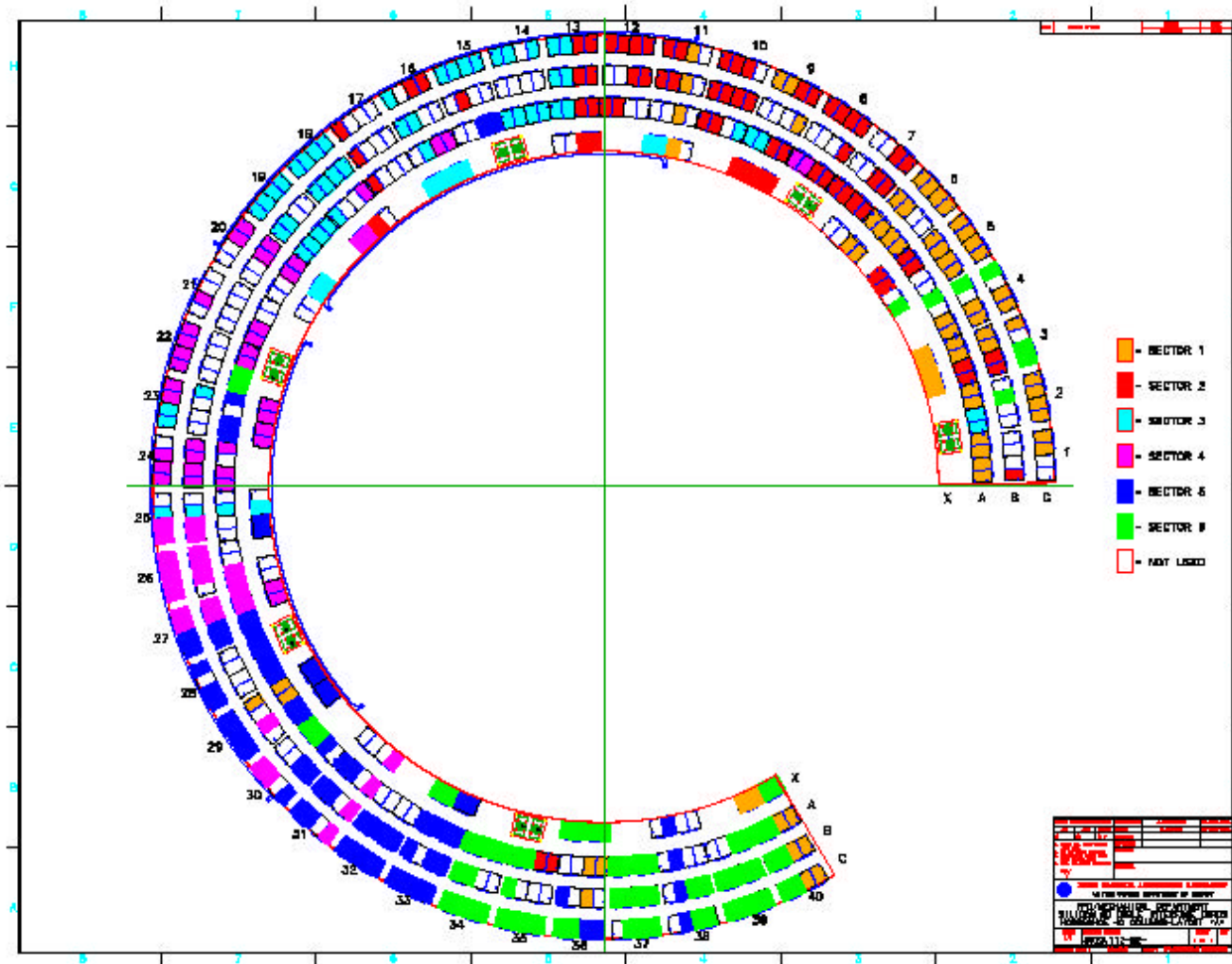
# 37 Card: Worse Case Moves



Plotted by mntaki on 04-Dec-02 . File: 37\_CARD\_WORSE\_CASE\_MOVES.ppt



# 40 Card Layout





# 40 Card Required Moves

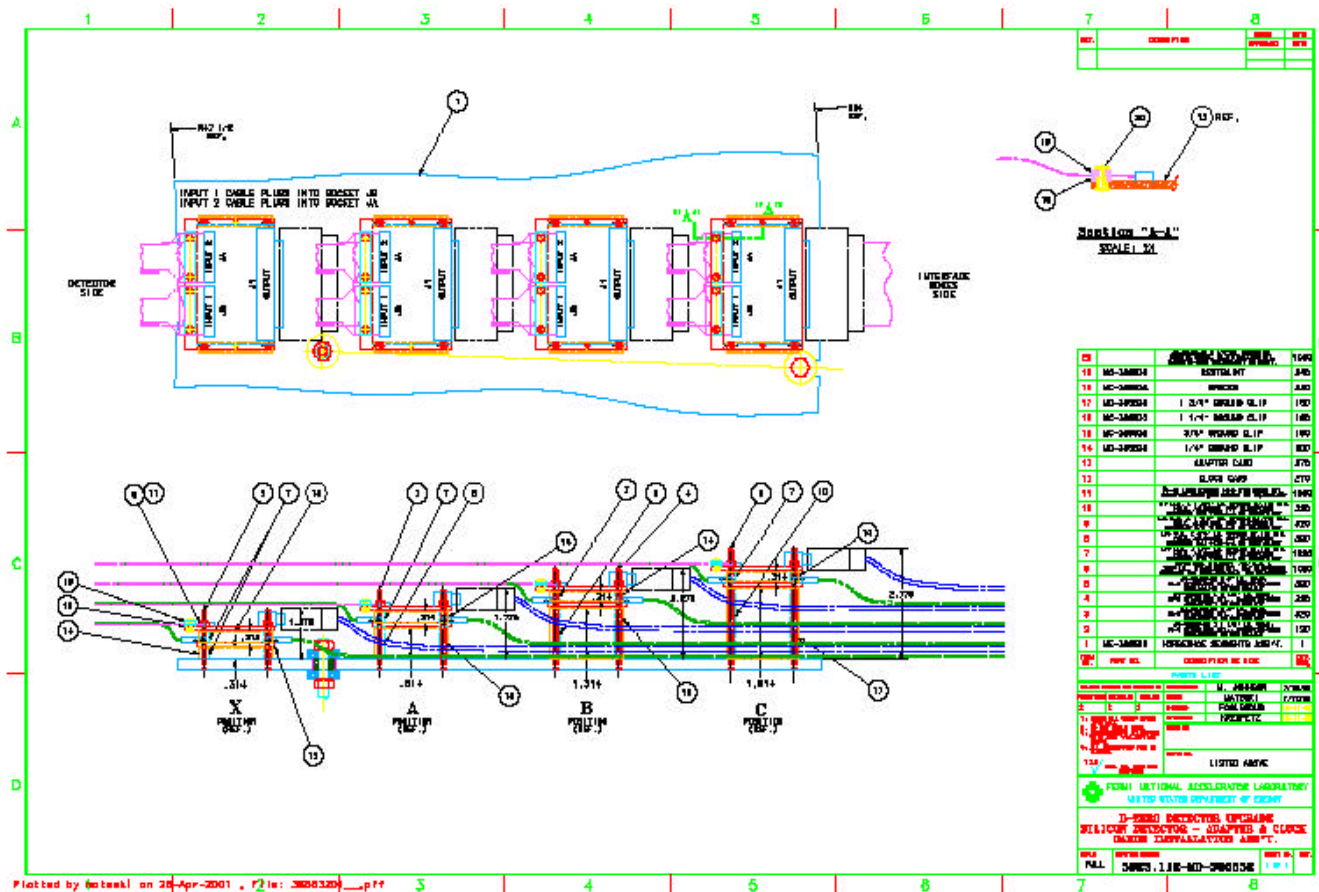
SECTOR	# of moves	from	to	DISTANCE (in)
1	2	77X	79X	(1) 10
2	2	19X	18X	(2) 5
3	3	23X	22X	(3) 5
4	1	47X	46X	(1) 5
5	2	51X	50X	(2) 5
6	4	8X	9X	(4) 5
Total	14			





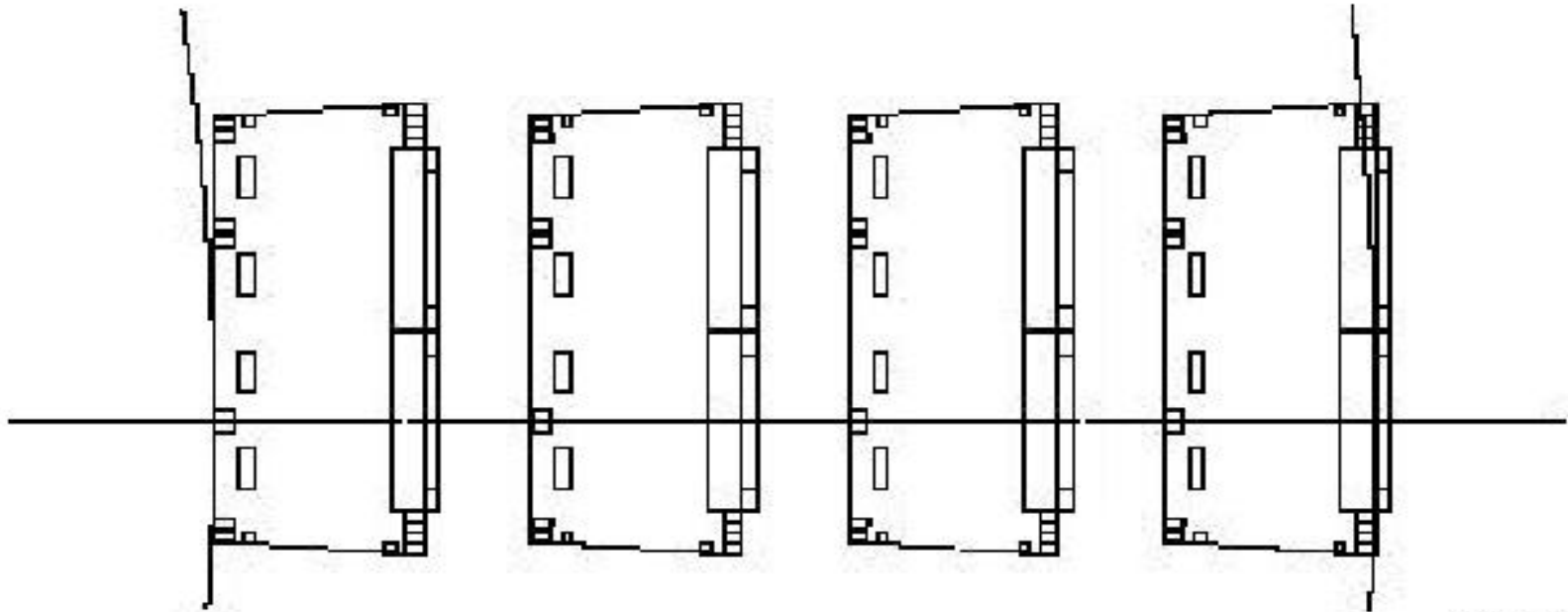
# Run 11a

## 80 Adapter Card Stack

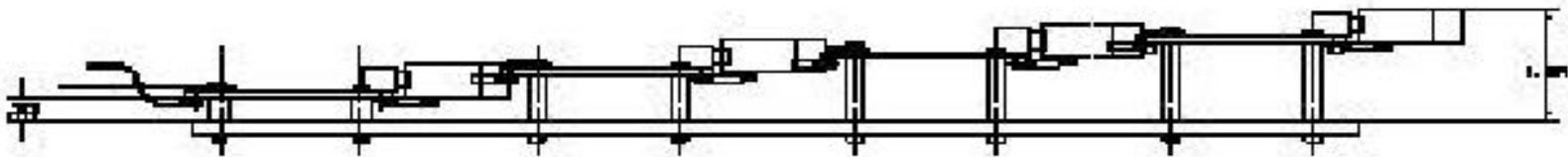




# 37 Card Layout

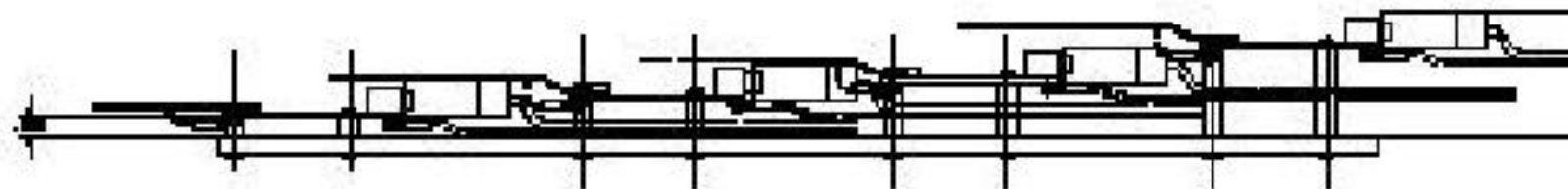
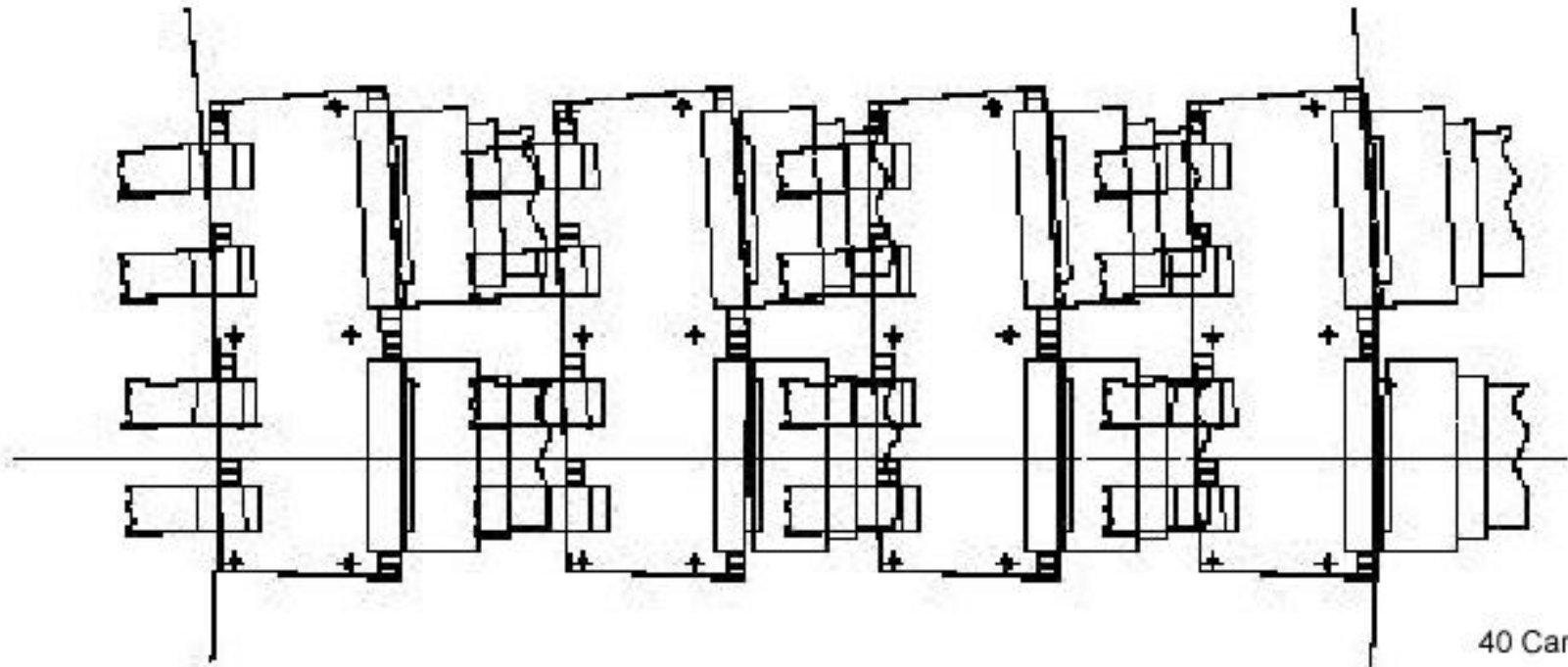


37 Card Layout





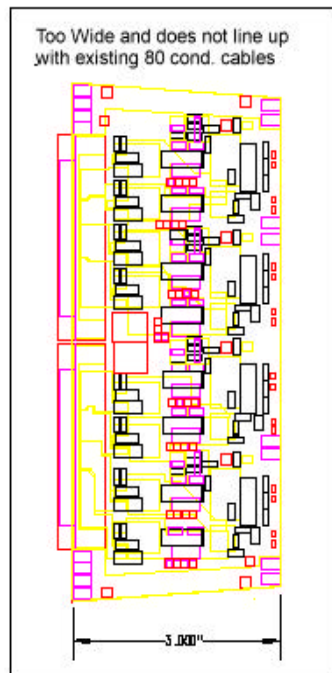
# 40 Card Layout





# 40 Card Row AC

## New Adapter Card Design



John Foglesong

9/16/2002



# Pros and Cons

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- Pros

- ◆ Eliminates 157 cable moves
- ◆ Provides for stacking scheme of 80 conductors

- Cons

- ◆ Reduces card area
  - If the clock drivers can be removed, we gain space anyway.
- ◆ Two versions of Adapter card
  - Eliminates 14-40 card layout "X" row moves.



# Future Plans

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- Build a full-scale mock-up of Horseshoe
  - ◆ Includes Junction Card Ring
  - ◆ Purpose
    - ◆ Determine cable routes
      - Hybrid to Junction Card
      - Junction Card to Adapter Card
      - LO/L1 HV system
      - Temperature Monitoring
      - Radiation Monitoring
      - Adapter Card LV Power Supply Cable
- KSU-heat sink testing



# Draftsman Needed

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- The following drawings are needed:
  - ◆ (4) each piece of horseshoe
    - Adapter card mounting holes
    - Attachment holes
    - Cooling connections
    - Assembly
  - ◆ (7) sector specific and overall drawings
    - Color coded per DAQ map
    - Used to determine AC power distribution
  - ◆ (8) AC Power distribution
    - One per Octant
  - ◆ 3D of gap for mock-up



# January ShutDown

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- Mapping
  - ◆ Confirm bachelor cable elimination scheme
  - ◆ Verify 80-Adapter Card correspondence
- Mock-Up
  - ◆ Get accurate 3-D gap measurements and photos
- Verify validity of L0/L1 HV cable route
- For Run IIa: Install shield



# Acknowledgements

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- Bill Cooper
- John Foglesong
- Don Friend
- Jack Mateski
- Bill Reay
- Ron Sidwell